

110TH CONGRESS
1ST SESSION

H. R. 1068

To amend the High-Performance Computing Act of 1991.

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 15, 2007

Mr. BAIRD (for himself and Mrs. BIGGERT) introduced the following bill;
which was referred to the Committee on Science and Technology

A BILL

To amend the High-Performance Computing Act of 1991.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. HIGH-PERFORMANCE COMPUTING RESEARCH**

4 **AND DEVELOPMENT PROGRAM.**

5 Title I of the High-Performance Computing Act of
6 1991 (15 U.S.C. 5511 et seq.) is amended—

7 (1) in the title heading, by striking “**AND**
8 **THE NATIONAL RESEARCH AND EDU-**
9 **CATION NETWORK**” and inserting “**RE-**
10 **SEARCH AND DEVELOPMENT**”;

11 (2) in section 101(a)—

1 (A) by striking subparagraphs (A) and (B)
2 of paragraph (1) and inserting the following:

3 “(A) provide for long-term basic and applied re-
4 search on high-performance computing;

5 “(B) provide for research and development on,
6 and demonstration of, technologies to advance the
7 capacity and capabilities of high-performance com-
8 puting and networking systems;

9 “(C) provide for sustained access by the re-
10 search community in the United States to high-per-
11 formance computing systems that are among the
12 most advanced in the world in terms of performance
13 in solving scientific and engineering problems, in-
14 cluding provision for technical support for users of
15 such systems;

16 “(D) provide for efforts to increase software
17 availability, productivity, capability, security, port-
18 ability, and reliability;

19 “(E) provide for high-performance networks, in-
20 cluding experimental testbed networks, to enable re-
21 search and development on, and demonstration of,
22 advanced applications enabled by such networks;

23 “(F) provide for computational science and en-
24 gineering research on mathematical modeling and al-

gorithms for applications in all fields of science and engineering;

“(G) provide for the technical support of, and research and development on, high-performance computing systems and software required to address Grand Challenges;

“(H) provide for educating and training additional undergraduate and graduate students in software engineering, computer science, computer and network security, applied mathematics, library and information science, and computational science; and

“(I) provide for improving the security of computing and networking systems, including Federal systems, including research required to establish security standards and practices for these systems.”;

(B) by striking paragraph (2) and redesignating paragraphs (3) and (4) as paragraphs (2) and (3), respectively;

(C) in paragraph (2), as so redesignated by subparagraph (B) of this paragraph—

(i) by striking subparagraph (B);

(ii) by redesignating subparagraphs (A) and (C) as subparagraphs (D) and (F), respectively;

1 (iii) by inserting before subparagraph
2 (D), as so redesignated by clause (ii) of
3 this subparagraph, the following new sub-
4 paragraphs:

5 “(A) establish the goals and priorities for Fed-
6 eral high-performance computing research, develop-
7 ment, networking, and other activities;

8 “(B) establish Program Component Areas that
9 implement the goals established under subparagraph
10 (A), and identify the Grand Challenges that the Pro-
11 gram should address;

12 “(C) provide for interagency coordination of
13 Federal high-performance computing research, devel-
14 opment, networking, and other activities undertaken
15 pursuant to the Program;” and

16 (iv) by inserting after subparagraph
17 (D), as so redesignated by clause (ii) of
18 this subparagraph, the following new sub-
19 paragraph:

20 “(E) develop and maintain a research, develop-
21 ment, and deployment roadmap for the provision of
22 high-performance computing systems under para-
23 graph (1)(C); and”; and

24 (D) in paragraph (3), as so redesignated
25 by subparagraph (B) of this paragraph—

1 (i) by striking “paragraph (3)(A)”
2 and inserting “paragraph (2)(D)”;

3 (ii) by amending subparagraph (A) to
4 read as follows:

5 “(A) provide a detailed description of the Pro-
6 gram Component Areas, including a description of
7 any changes in the definition of or activities under
8 the Program Component Areas from the preceding
9 report, and the reasons for such changes, and a de-
10 scription of Grand Challenges supported under the
11 Program;”;

12 (iii) in subparagraph (C), by striking
13 “specific activities” and all that follows
14 through “the Network” and inserting
15 “each Program Component Area”;

16 (iv) in subparagraph (D), by inserting
17 “and for each Program Component Area”
18 after “participating in the Program”;

19 (v) in subparagraph (D), by striking
20 “applies;” and inserting “applies; and”;

21 (vi) by striking subparagraph (E) and
22 redesignating subparagraph (F) as sub-
23 paragraph (E); and

24 (vii) in subparagraph (E), as so redes-
25 ignated by clause (vi) of this subpara-

1 graph, by inserting “and the extent to
2 which the Program incorporates the rec-
3 ommendations of the advisory committee
4 established under subsection (b)” after
5 “for the Program”;

6 (3) by striking subsection (b) and inserting the
7 following:

8 “(b) ADVISORY COMMITTEE.—(1) The President
9 shall establish an advisory committee on high-performance
10 computing consisting of non-Federal members, including
11 representatives of the research, education, and library
12 communities, network providers, and industry, who are
13 specially qualified to provide the Director with advice and
14 information on high-performance computing. The rec-
15 ommendations of the advisory committee shall be consid-
16 ered in reviewing and revising the Program. The advisory
17 committee shall provide the Director with an independent
18 assessment of—

19 “(A) progress made in implementing the Pro-
20 gram;

21 “(B) the need to revise the Program;

22 “(C) the balance between the components of the
23 Program, including funding levels for the Program
24 Component Areas;

1 “(D) whether the research and development un-
2 dertaken pursuant to the Program is helping to
3 maintain United States leadership in high-perform-
4 ance computing and networking technology; and

5 “(E) other issues identified by the Director.

6 “(2) In addition to the duties outlined in paragraph
7 (1), the advisory committee shall conduct periodic evalua-
8 tions of the funding, management, coordination, imple-
9 mentation, and activities of the Program, and shall report
10 not less frequently than once every two fiscal years to the
11 Committee on Science of the House of Representatives
12 and the Committee on Commerce, Science, and Transpor-
13 tation of the Senate on its findings and recommendations.
14 The first report shall be due within one year after the date
15 of enactment of this paragraph.

16 “(3) Section 14 of the Federal Advisory Committee
17 Act shall not apply to the advisory committee established
18 by this subsection.”; and

19 (4) in subsection (c)(1)(A), by striking “Pro-
20 gram or” and inserting “Program Component Areas
21 or”.

22 **SEC. 2. DEFINITIONS.**

23 Section 4 of the High-Performance Computing Act
24 of 1991 (15 U.S.C. 5503) is amended—

(1) in paragraph (2), by inserting “and multidisciplinary teams of researchers” after “high-performance computing resources”;

(2) in paragraph (3)—

(A) by striking “scientific workstations,”;

(B) by striking “(including vector supercomputers and large scale parallel systems)”;

(C) by striking “and applications” and inserting “applications”; and

(D) by inserting “, and the management of large data sets” after “systems software”;

(3) in paragraph (4), by striking “packet switched”;

(4) by striking “and” at the end of paragraph (5);

(5) by striking the period at the end of paragraph (6) and inserting “; and”; and

(6) by adding at the end the following new paragraph:

“(7) ‘Program Component Areas’ means the major subject areas under which are grouped related individual projects and activities carried out under the Program.”.

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